Fingerprint Deadbolt System

(Model : FDL-510)

Installation and Operation Manual

- Thanks for choosing fingerprint deadbolt from Fingcas
- Please read this manual carefully before starting operation
- Please keep this manual for further reference later

Fingcas Corporation
(www.fingcas.com)

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Please read this manual carefully before operation. If any problem occurs or if you need further instruction or assistance, please contact your Fingcas Dealer

1. Introduction

1.1 Product Concepts

Designed for User convenience

No more keys, cards or remotes. The ultimate convenience of nothing to carry, forget, pass on, be duplicated or to have stolen. Plus, very easy and quick to enroll and to verify fingerprints.

Highest Security Level

Fingerprint-based identification is the oldest and the most reliable among all the biometric technologies because your fingerprints are unique and invariable throughout your lifetime.

Small and slim design

Palm-size front body with 36mm thickness, powered by 4 AA alkaline batteries

Easy Installation and Operation

Requires one hole to be drilled to install and simple steps for enrollment/deletion of ingerprint/User Access Code

Sufficient fingerprint capacity

99 fingerprints can be enrolled

Auto Locking and temporary open mode

User can set up auto locking or temporary open mode

Audible and visible indicators

LED light and buzzer sound indicates operation results

Emergency User Access Code and terminals for external power source

User Access Code can be used in case your enrolled finger are injured, or to allow others emergency access. A 9V square battery can be used externally to provide power if the internal batteries are run down.

Built-in Alarm

A loud alarm sounds when the door is opened by force

Sleep mode and initiation sensor

The lock powers down when no in use. In manual “Fingerprint Sensor On” mode, the infrared initiation sensor will “wake up” the fingerprint sensor when a finger is placed on the sensor glass, thus improving battery life and sensor efficiency.

Applications

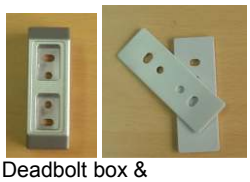
Stand-alone deadbolt lock for houses, apartments, villas, offices, meeting rooms, storerooms, etc.

1.2 Package Contents

Front Body

Back Body

Back body plate


Deadbolt box &
Height adjustment jig

Bolts and screws

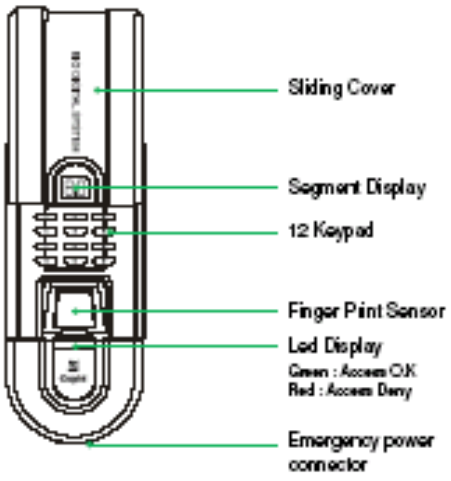
Batteries

User's manual

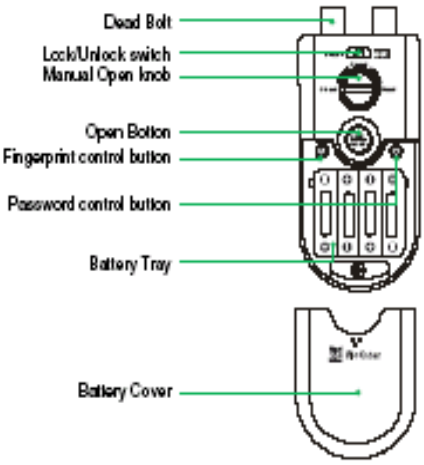
1.3 Description of Components & Exploded view

- Description of Components

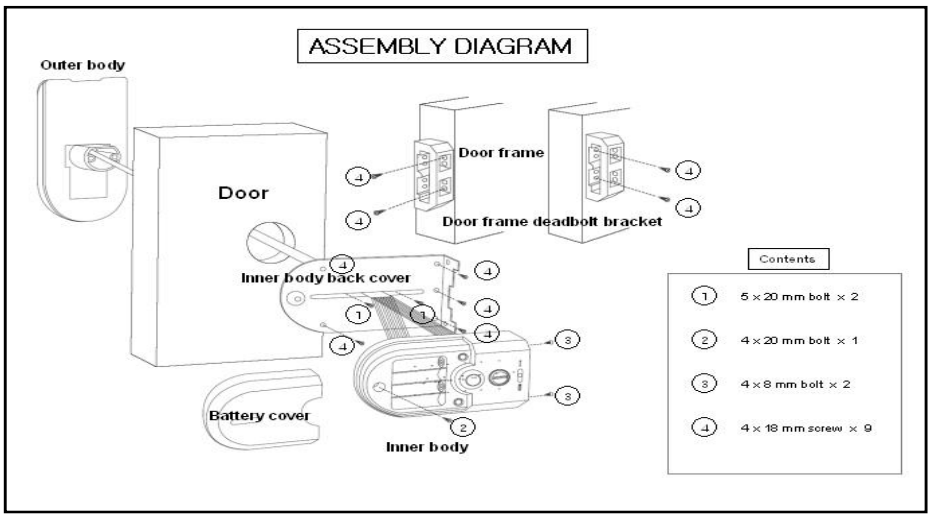
Front Body



Back Body



- Exploded View


ASSEMBLY DIAGRAM
Outer body
Door
Door frame
Door frame deadbolt bracket
Inner body back cover
Battery cover
Inner body
Contents
1 5 x 20 mm bolt x 2
2 4 x 20 mm bolt x 1
3 4 x 8 mm bolt x 2
4 4 x 18 mm screw x 9

1.4 Technical Specification

Item	Technical parameters
Fingerprint sensor	Optical Sensor
Sensor resolution(sensing size)	500 dpi (16 x 19mm)
Enrollment time	< 1 second
Verification time	< 1 second
False Reject Rate(FRR)	1/30 ~ 1/100
False Acceptance Rate(FAR)	1/100,000 ~ 1/1,000,000
Fingerprint Scanning	twice to get on fingerprint template
User Capacity	up to 99 fingerprints (1:N)
Initiation sensor	Infrared Sensor applied
Supply Voltage	DC 3.3V ~ DC3.8V
Power	1.5V AA x 4 Alkaline battery
Battery life	Approx. 12 months (20 times/day)
Emergency Power Source	Terminal for 9V square battery
LED Display	ID Number indicator (00 ~ 98)
Thickness of the door	32mm ~ 60mm
Material	Body : Zinc alloy die-casting Battery Cover : Strengthen Plastic
Dimension	Front Body : 70(w) x 160(h) x 36(d)mm Back Body : 78(w) x 160(h) x 38(d)mm
Weight (Net)	1.8 Kg
Operating Environment	- Temperature : -20⌧C ~ +75⌧C - Humidity : 45% RH-80% RH
Safety Standards	FCC, CE

2. Programming

The function buttons used for programming are hidden by the battery cover on the back body. This means that only people authorised to be on the inside and with knowledge of the lock programming will be able to add/delete/change data and settings. The door will need to be open when programming, in order to give access to the front and back of the lock.

2.1 User Access Code (PIN Code)

2.1.1 How to enroll/change User Access Code

Each lock comes with the factory default User Access Code of 0000. For your own security, you are recommended to immediately change it to a User Access Code of your own choice (4 to12 digits), and also to consider changing it at various intervals in the future.

Step 1: Open battery cover and press “N” button

Sept 2: Pull up sliding cover (LED displays “PO”)

Step 3: Press “1” and “#” (LED displays “P1”)

Step 4: Put in your own PIN code (4 ~ 12 digits) and then press “#”.

Put your pin code (4~12 digits) and “#”

Step 5: Do Step 4 again (double entry is required).A triple beep sound and a green light indicates successful programming.

☆When you set a new User Access Code, the previous one will be automatically be deleted.

2.2 Fingerprint enrollment

2.2.1 How to enroll your fingerprint

Step 1: Open battery cover and press “D” button

Step 2: Pull up sliding cover (LED displays “F0”)

Step 3: Press “1” and “#” button (LED displays “F1” and changes soon to display ID number for the next fingerprint enrollment). The fingerprint sensor will then turn on with a red light.

“F1” displays in LED

“ID number” displays in LED and red sensor light turns on

☯ ID numbers for fingerprint enrollments start at “00” ends “98”.
They are automatically assigned in sequence as you enroll each new fingerprint.

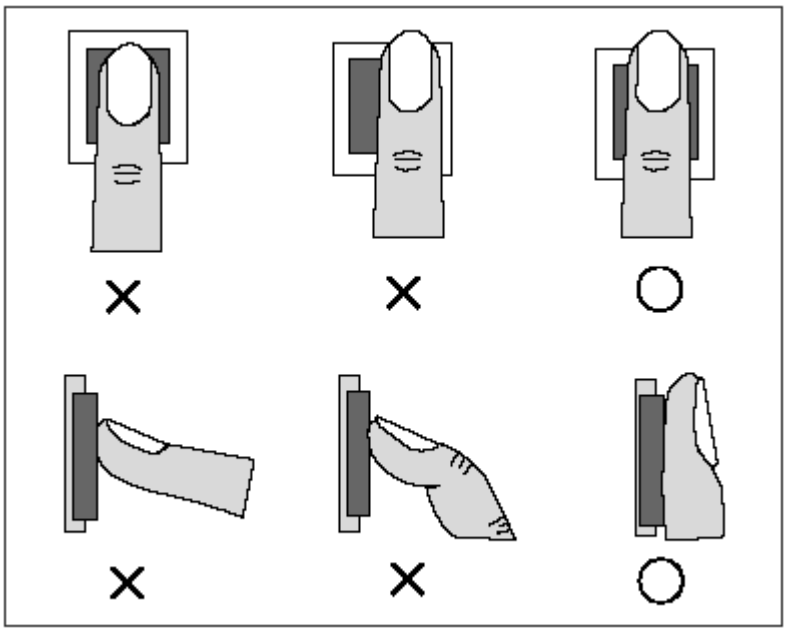
☯ Please record the ID number and personal details for each fingerprint enrolled. The correct ID number will be needed when deleting an individual fingerprint (Refer to 2.2.2 for Deletions).

Step 4: : As soon as the red sensor light turns on, place your chosen finger, flat, on the glass of the sensor. When the red sensor light turns off, lift your finger and quickly place it back on again. The red

sensor light will turn on and then off once more to complete
the second scan of that same finger. A triple beep sound indicates
Place finger twice the success of that enrolment.

- To continue enrolling more fingerprints, or to try again if unsuccessful, press “#” and then repeat Step 4. To achieve maximum convenience and flexibility, we recommend you enrol several fingers from each hand.

Correct Fingerprint Placement



<Fingerprint Placement>

2.2.2 How to delete enrolled fingerprints

2.2.2.1 Delete Single Fingerprint from Lock

Step 1: Open battery cover and press “D” (LED displays “FO”)

Step 2: Pull up sliding cover and press “2” and “#”(LED displays “F2”)

“F2” displays in LED

Step 3: Enter the ID number (2 digits) of the enrolled fingerprint you wish to delete and then press “#”.

A triple beep sound and a green light indicate a successful deletion.
Press ID Number (2 digits) and "#"

☯ To continue deleting individual fingerprints, keep repeating Steps 2 and 3.

2.2.2.2 Delete all Fingerprints from Lock

Step 1: Open battery cover and press "D" (LED displays "FO")

"F0" displays in LED

Step 2: Pull up sliding cover and press "3" and "#"(LED displays "F3")

"F3" displays in LED

Step 3: Enter User Access Code (PIN Code) and then press "#". A triple beep sound and a green light indicates successful total deletion.

Press PIN code and "#"

☯ You can delete all enrolled fingerprints but User Access Code will remain undeleted in this mode.

2.3 Unlocking the door from outside

* **Note:** The manual lock lever on the back body must be in the "UNLOCK" position for external Authorised entry to work.

2.3.1 with User Access Code (PIN Code)

Step 1: Pull up the sliding cover which turns on the keypad backlighting.

☯ If the keypad backlight is not on, or turns off, then press "*" to turn it on again before proceeding. If it will not turn on at all, then the manual lock lever on the back body is in the "LOCK" position and you can not enter until it is moved to the "UNLOCK" position.

Step 2: Enter User Access Code (PIN Code) and then press "#". The motor driving sound of the Deadbolt unlocking and a triple beep sound indicate successful unlocking.

☯ The lock will automatically engage within 5 seconds of the door being closed once you have entered.
☯ Just a double beep sound and a red light indicates an error. Please check your User Access Code and try again.

2.3.2 with fingerprint

Step 1: Pull up the sliding cover which turns on the keypad backlighting

☯ If the keypad backlight is not on, or turns off, then press "*" to turn it on again before proceeding. If it will not turn on at all, then the manual lock lever on the back body is in the "LOCK" position and you cannot enter until it is moved to the "UNLOCK" position.

Step 2: Place an enrolled finger, flat, on the glass of the fingerprint sensor. The red sensor light indicates the finger is being scanned and compared to the stored template. This should take less than 1 second. The motor driving sound of the Deadbolt unlocking and a triple beep sound indicate successful verification and access granted.

☯ If there is no reaction and the red sensor light remains on, then another verification is required. Lift your finger off and then place it back, flat, on the sensor glass. If this does not work, then go back to Step 1 and try again with the same, or another, enrolled finger.
☯ The lock will automatically engage within 5 seconds of the door being closed once you have entered.
☯ Just a double beep sound and a red light indicates an error. Please check your fingerprint and try again

2.4 Unlocking the door from inside

☯ **Note:** The manual lock lever on the back body must be in the "UNLOCK" position in order to unlock and exit from the inside.

Method 1 : Push Open/Close button on back body.
The motor driving sound of the Deadbolt unlocking and a triple Beep sound indicates successful unlocking.
☯ If you push the Open/Close button again, the deadbolt will lock

Method 2 : Turn the knob on the back body to the "OPEN" position by manual force. The Deadbolt will remain unlocked (Permanent Unlock Mode) until the knob is manually turned back to the "CLOSE" position.

2.5 Temporary Unlock Mode

This lock is pre-set in “Automatic Locking Mode”. After being electronically opened, it will automatically lock within 5 seconds of the door remaining in, or returning to, its fully closed position. However, you can set a “Temporary Unlock Mode” to enable free access without the use of fingerprints or User Access Code. For example, this is useful for storeroom and office doors that need to remain unlocked during office hours.

☯ **Note:** The manual lock lever on the back body must be in the “UNLOCK” position.

2.5.1 How to set the temporary unlock mode

Step 1: Unlock using your fingerprint or User Access Code, and open the door so that you have access to the front and the back of the lock at the same time.

Step 2: Open battery cover and press “N” and “#”(LED displays “P0”)
A long beep sound is heard which indicates success of the programming.

Step 3: Pull up the sliding cover and and press “2” and “#”(LED displays “P2”)
A triple beep sound is heard, which indicates success of the programming.

☯ To cancel the Temporary Unlock Mode, pull the sliding cover up and then down.
The motor driving sound of the Deadbolt locking and a triple beep sound indicates success.

☯ To stop temporary unlock mode, you pull up the sliding cover and down at any time and the door will be locked with motor driving noise. (you can not open the door without your fingerprint verification)

☯ To re-activate the Temporary Unlock Mode, simply unlock using your fingerprint or User Access Code. The lock will then remain in the unlocked position until the Temporary Unlock Mode is cancelled again or deleted.

2.5.2 How to delete the Temporary Unlock Mode

Step 1: Open the door so that you have access to the front and the back of the lock at the same time.

Step 2: Open battery cover and press “N” (LED displays “PO”)

Step 3: Pull up sliding cover and press “3” and “#”(LED displays “P3”)

A triple beep sound is beard, which indicates success of the programming.

☯ Then, close the door and the Deadbolt will automatically lock within 5 seconds of closing. Automatic Locking Mode has been re-activated.

2.6 Automatic “Fingerprint Sensor On” mode

This lock is pre-set in the manual “Fingerprint Sensor On” mode. This means that the fingerprint sensor will be turned on only when the initiation sensor detects a finger being placed on the sensor glass. However, if the lock is in direct sunlight which is stronger than the light emitted by the initiation sensor, then the finger may not be detected and the fingerprint sensor may not turn on. In such cases, the automatic “Fingerprint Sensor On” mode can be set so that the fingerprint sensor automatically turns on when the keypad is backlit (slide cover up, or press “*”).

This mode is recommended for locks installed in strong direct sunlight.

☯ **Note**: Permanent use of the automatic “Fingerprint Sensor On” mode may slightly reduce battery life

2.6.1 How to set automatic “Fingerprint Sensor On” mode

Step 1: Open battery cover and press “N” button (LED displays “PO”)

** Picture will be changed to show the action correctly (Pressing “N” button)

Step 2: Pull up sliding cover and press “6” and “#” (LED displays “P6”)
A triple beep is heard which indicates success of the programming.

** Picture will be changed to show the action correctly

2.6.2 How to cancel automatic “Fingerprint Sensor On” mode

Step 1: Open battery cover and press “N” button (LED displays “PO”)

** Picture will be changed to show the action correctly (Pressing “N” button)

Step 2: Pull up sliding cover and press “7” and “#” (LED displays “P7”)
A triple beep is heard which indicates success of the programming.

** Picture will be changed to show the action correctly

2.7 Programming Summary Table Delete Temporary Unlock mode

The following is a list of function codes.

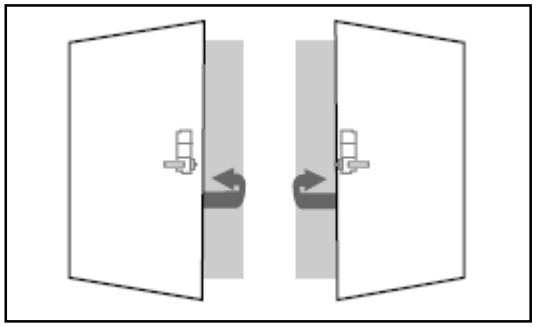
Button	Keystrokes	LED Display	Function
D	“1” and “#”	F1	Enroll fingerprint
D	“2” “#” “ID”and “#”	F2	Delete single fingerprint by ID
D	“3” “#” “PIN” and “#”	F3	Delete all fingerprints using PIN Code
N	“1” “#” “PIN” and “#”	P1	Enter new PIN Code(Do “PIN” and “#” twice)
N	“2” and “#”	P2	Set Temporary Unlock mode
N	“3” and “#”	P3	Delete Temporary Unlock mode
N	“6” and “#”	P6	Set automatic Fingerprint Sensor On mode
N	“7” and “#”	P7	Cancel automatic Fingerprint Sensor On mode

3. Installation of the lock

3.1 Checking before installation

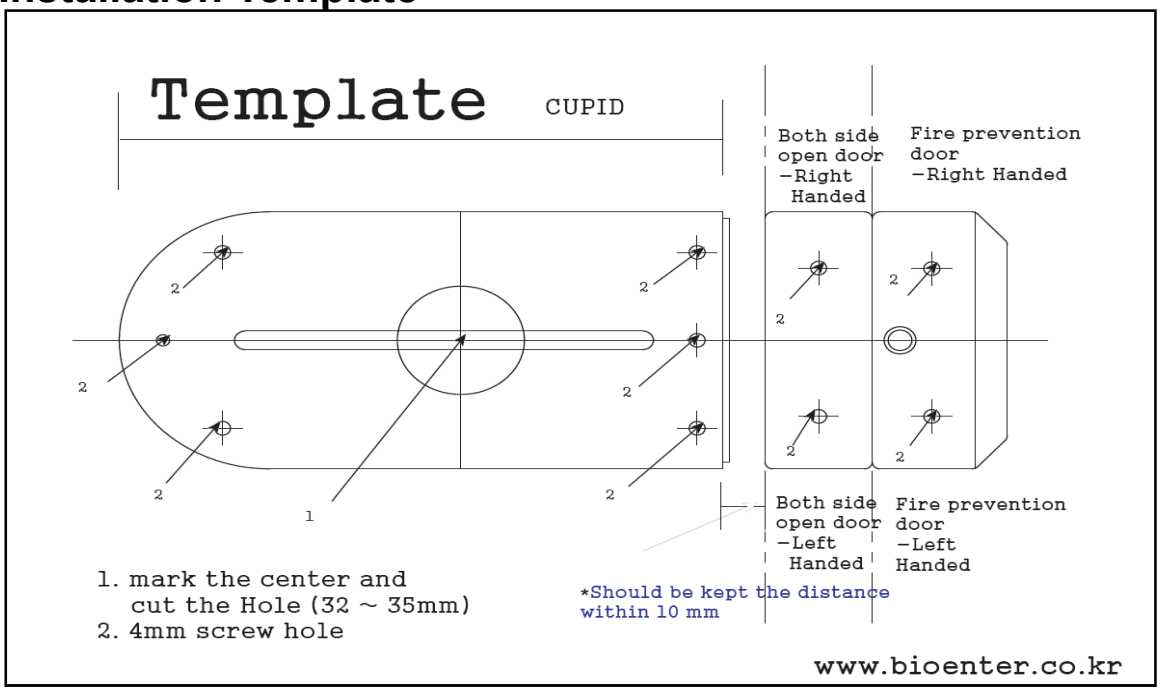
* You will need - Hole cutter (32 – 35mm) - Electric drill (3mm drill bit) - Phillips screwdriver
* Door Thickness must between 32 ~ 60mm
  (for 50 ~ 60mm thickness, longer connecting screws are needed)
* Checked for right or left handed positioning

Left Hand/Right Hand

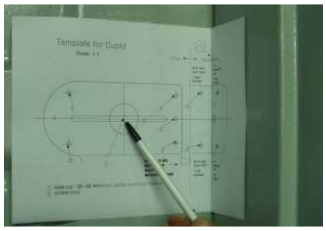


This product can be used for either left or right handed doors.

3.2 Installation Template


Template
CUPID
Both side open door -Right Handed
Fire prevention door -Right Handed
Both side open door -Left Handed
Fire prevention door -Left Handed
1. mark the center and cut the Hole (32 ~ 35mm)
2. 4mm screw hole
*Should be kept the distance within 10 mm
www.bioenter.co.kr

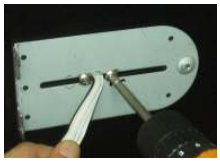
3.3 How to Install and test



1. Put the template on the inside of the door in the correct position and orientation for a left or right handed door. We recommend placement 20cm above your cylinder lock handle.

2. Mark the centre of the hole cut-out and make a guide hole with the 3mm drill bit. Then use the hole cutter, centred in the guide hole, to complete the cut-out.

3. Take the cable connectors and strap on the front body, from the outside, through the cut-out hole and then through the gap in the back body plate, on the inside.



4. Push the cylinder of the front body into the cut-out hole and keep light tension on the strap from the inside. Fix the back body plate to the front

Caution : Please be careful cables are not pinched and do not get damaged when screws are applied

5. Fix the back body plate to the door, with its leading edge flush with the outer edge of the door. (use 5 of the 18mm screws).

6. Join the connectors on the strap to the connectors on the back body. Please note pin placement to get correct orientation and make sure that 10 pin connects to 10 pin and 11 pin connects to 11 pin.

7. Fix the back body to the back body plate using one 20mm screw at the end of the battery box and two 8mm screws in the leading edge.

8. Place plastic height adjustment jig(s) under the Deadbolt box, sufficient to make its height align with the height of the back body when the door is closed and the Deadbolt box is mounted on the door jamb. Then, fix the Deadbolt box, and jig(s), to the door jamb using at least two 20mm screws.

9. Put the batteries into the battery box (1.5V AA x 4 pcs) in right polarity.

10. The distance between back body and Deadbolt box should be within 10mm.

11. Close the battery cover and test the lock (Open/Close button)

4. Maintenance

☯ This is a high-tech electronic device. It is highly recommended that all repairs are done by authorised persons only. Failure to comply could void your warranty.

☯ Keep the sensor surface clean and dry. Wipe gently with a clean, soft, dry cloth to remove any dirt, residues, stains or moisture.

☯ A low battery warning alarm will sound when the batteries run down to less than 30% of full power. You should then replace **all** of the batteries with a new set as soon as possible.

☯ If you do not change the batteries in time, or mix old and new batteries causing rapid power loss, and the lock ceases to function, then you can place a 9V square battery on the terminals at the base of the front body to provide temporary power. Your fingerprint records are not lost. You can enter using an enrolled fingerprint and then change the batteries.

☯ The batteries supplied with the lock may suffer some power loss during storage and transit prior to sale and will be subject to heavy use during initial testing and enrolment. They may need to be replaced sooner than normally expected.

5. Basic Troubleshooting

Problem		Possible reasons and checks	Solution
Forget User Access Code		Check with administrator for User Access Code records (Refer to 2.1.1)	If no record exists, you must change access code again
If the lock does not recognize a fingerprint		Was the fingerprint properly placed (in the center of the sensor)?	Try again by putting the fingerprint in the center of the sensor.
If the sensor light does not come on. If keypad does not work		Batteries may not be installed correctly or may be run down	Use 9V square battery held against terminals at base of the front body to gain access.
If the sensor light does not come on. If keypad does not work. If 9V battery does not work.		Manual Lock Lever on the Back Body may be in the “LOCK” position.	Manual Lock Lever has to be moved to the “UNLOCK” position by someone on the inside.
Red indicator flashes with double beep sound and door can not be opened		Invalid or deleted fingerprint. Fingerprint covered/obscured or poorly positioned	Place an enrolled and unobscured fingerprint correctly on the sensor
Case of error in LED Display	A7	Sensor error	Change batteries
	98	Memory share error	Try again
	Er	General error	Use correct User Access Code or finger in correct position.

6. ID Number and Fingerprint record

Record each ID number, its date of enrollment, and a fingerprint description for future reference.

ID No.	Date	Person	Finger	ID No.	Date	Person	Finger